

IDC TECHNOLOGY SPOTLIGHT

Entry-Level Solutions for Private Cloud Automation Deliver Rapid Returns

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Adapted from *Worldwide Cloud Systems Management Software 2012–2016 Forecast* by Mary Johnston Turner, IDC #234001

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IDC expects spending on cloud server and application management software will total more than \$3 billion by 2016 as IT customers of all sizes and across many industries embrace more efficient and automated datacenter operations strategies. Often, the first step in this journey focuses on implementing an in-house private cloud environment to enable self-service provisioning for application developers and other groups of technically savvy end users. Traditionally, the provisioning of physical and virtual servers has been a complex, time-consuming multistep process. However, using entry-level private cloud automation tools, many IT organizations can standardize and streamline the process, reducing the time from order to provisioning completion from weeks to less than 15 minutes.

Getting started with private cloud automation can be challenging. This is particularly true for organizations that have limited experience with defining standardized templates and automated workflows. IT teams are often under significant pressure to deliver value quickly and need private cloud automation solutions that can validate the business case with a minimum of delay or business disruption. This Technology Spotlight examines the value of entry-level private cloud automation and orchestration solutions in helping customers of all sizes ramp up private cloud environments quickly and cost effectively while paving the way for more sophisticated private or hybrid cloud solutions to be deployed over time. This paper also looks at the way that Cisco's Intelligent Automation for Cloud Starter Edition addresses these entry-level requirements.

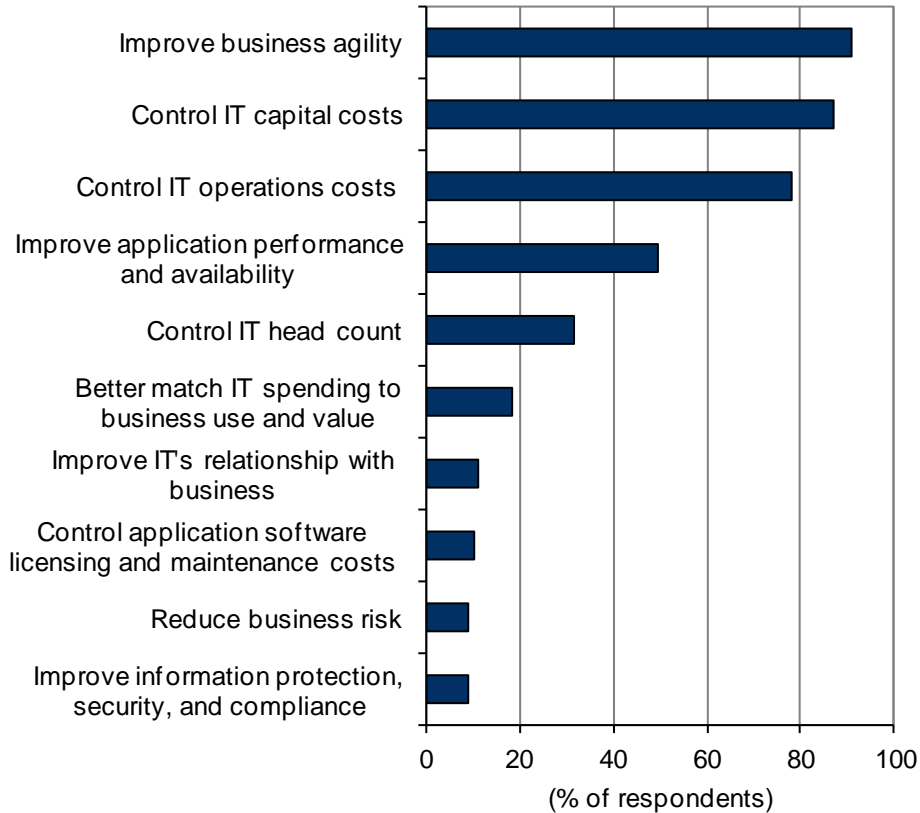
Introduction

IDC's research consistently shows that medium-sized business and enterprise-class IT organizations are aggressively investing in private cloud initiatives to help improve IT economics and overall business agility (see Figure 1). These IT teams want to better match the use and cost of IT resources to business requirements while ensuring that end users and application developers have access to the resources they need as quickly as possible. In many cases, individual application development and testing teams, or other technically savvy business groups, may be actively experimenting with public cloud services, such as those provided by Amazon EC2. As a result, they expect internal IT teams to deliver resources rapidly, at a very low cost, while guaranteeing consistent service levels and resource availability.

Figure 1

Top 5 Goals for Private IT Cloud Initiatives

Q. What are the top 5 goals for your organization's private IT cloud initiative?



n = 200

Note: Multiple responses were allowed.

Source: IDC's *U.S. Private IT Cloud Systems Management Survey*, 2011

Despite the many expected benefits, IT organizations often find the introduction of self-service private cloud automation can be highly disruptive to many existing processes and policies. Many of these organizations have already deployed substantial numbers of virtual machines (VMs). However, they have often failed to automate workflows and approval processes between different compute, network, storage, security, and user administration teams. Similarly, they may not have defined repeatable physical server or VM configuration templates or had those templates approved by relevant business and development teams. As a result, it can often take days or weeks, rather than minutes, to fully provision and activate requested resources due to the flurry of internal work orders, approvals, and manual handoffs that are needed to coordinate all the separate required activities.

To quickly get started with in-house private cloud automation, and to develop proof points that will help justify broader cloud investments later on, many IT organizations opt to implement self-service virtual machine provisioning and policy-based physical and virtual server life-cycle management. Over time, they expect to add the ability to provision middleware and applications and even public cloud resources by extending these same tools and processes. But, first, they need to demonstrate

that private cloud automation and self-service provisioning can be effectively implemented and can provide real business value rapidly.

Many established and emerging systems management software vendors offer comprehensive suites of tools to support a broad range of heterogeneous private and hybrid cloud management requirements. In some cases, however, IT organizations may find these solutions to be too complex and expensive for their entry-level needs. IT organizations that want to get started and deliver value quickly look to use solutions that are less expensive, easier, and faster to deploy while they validate the business and operational value of private cloud and on-demand self-service provisioning. At the same time, they need to invest in solutions that will be able to scale up as the scope and complexity of their private and hybrid cloud management requirements expand over time.

Important Attributes for Entry-Level Private Cloud Automation Solutions

Entry-level private cloud automation solutions need to provide core cloud management capabilities including self-service automation and orchestration as well as a catalog of standardized infrastructure options. Yet they should be architected in such a way that the investment is not lost if the customer decides to build out a more extensive, heterogeneous private or hybrid cloud environment over time. When it comes to evaluating entry-level options, customers must first consider the compute, network, and hypervisor platforms that will be used to support their private cloud and then select a solution that can quickly deliver out-of-the-box value for that environment while being able to scale up and accommodate more complex environments over time if needed.

Critical capabilities that should be provided by entry-level private cloud management solutions include the following:

- The ability to be rapidly implemented across the customer's core set of physical and virtual infrastructure resources
- Intuitive, user-friendly administrator and end-user interfaces with simple navigation that requires little or no specialized training
- Prebuilt templates, catalog content, and automation workflows available out of the box to quickly enable standard best practice process orchestrations and resource configurations
- Easy-to-design and easy-to-maintain provisioning templates and design tools
- Clear, cost-effective pathway to expand the scope and complexity of the resources, workflows, and templates supported over time

Entry-level private cloud automation and orchestration tools allow IT teams and technically savvy end users, such as application developers, to quickly implement the organization's first private cloud with relatively simple, intuitive tools. IT teams can leverage out-of-the-box content and best practices to demonstrate how the use of standardized configurations and workflows can dramatically reduce complexity, time, and costs.

End users and developers can experiment with self-service strategies without losing significant time away from their day jobs. As both IT and user teams become more familiar with self-service and cloud automation, they are likely to become more willing to explore other options for pooling and sharing and automating the use of a wider range of compute, storage, and network resources.

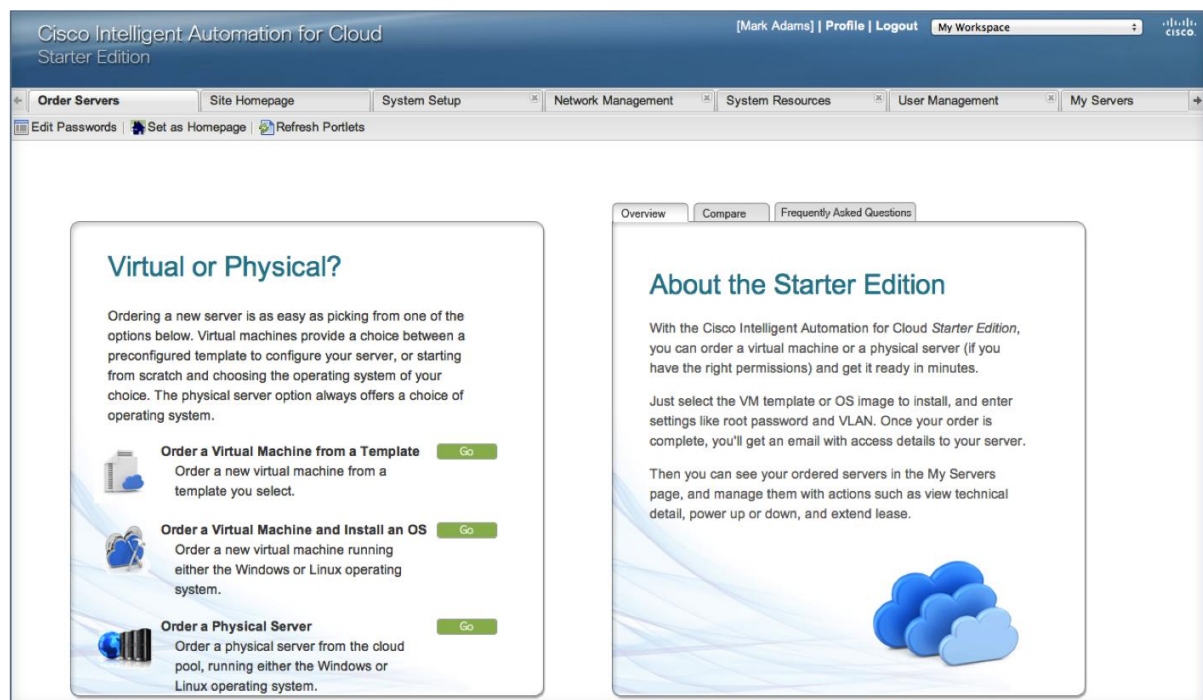
Considering Cisco Intelligent Automation for Cloud Starter Edition

Cisco Intelligent Automation for Cloud Starter Edition offers a cost-effective option for implementing an organization's initial private cloud, with automation and orchestration capability that can be rapidly deployed for the Cisco Unified Computing System (Cisco UCS) platform.

Cisco Intelligent Automation for Cloud Starter Edition provides customers with a turnkey out-of-the-box self-service provisioning portal and process orchestration engine that includes extensive, prebuilt templates and workflows for provisioning physical and virtual Windows or Linux servers via a simple, intuitive Web-based interface (see Figure 2).

Figure 2

Cisco Intelligent Automation for Cloud Starter Edition



Source: Cisco, 2012

The solution is designed specifically to support Cisco UCS computing and network resources and VMware virtual machines. The preconfigured, customizable Cisco Cloud Portal interface presents end users with a simplified set of physical and virtual infrastructure and operating system options. Users are presented with only the options that have been preapproved for their use based on their roles and log-in credentials.

Using the self-service Web portal, end users enter an order by selecting from the menu. Multiple physical and virtual selections can be made in a single session. Virtual machines are automatically provisioned through the prebuilt integration with VMware. Deep integration with Cisco UCS Manager through the XML-based API provides the ability to specify and provision service profiles for physical blade servers. This allows users to determine the optimal service profile configuration for the physical blade based upon workload needs and then automate the provisioning of that UCS blade.

Both end users and IT administrators can track the status of each request from inception to completion and can monitor the actual amount of resources consumed during the lifetime of the machine. End users can also use the portal to request extended use of resources or to decommission resources that are no longer needed. More sophisticated users, and IT staff, can use the portal to execute simple administrative tasks such as power on/power off, taking snapshots, or modifying CPU or RAM configurations.

The built-in Cisco Process Orchestrator automates service delivery using predefined workflows to request the appropriate physical, virtual, network, and operating system resources. In most situations, a user request can be completed in 15 minutes or less. As power users, systems administrators gain additional capabilities via the portal, including a streamlined automation environment to complete such tasks as registering and repurposing resources and monitoring capacity utilization.

The Cisco Intelligent Automation for Cloud Starter Edition is a single-tenant solution that supports a maximum of one VMware vCenter and one Cisco UCS Manager. Its purpose is to enable IT organizations to quickly and cost effectively deploy an infrastructure-as-a-service (IaaS) solution as they learn how to best design and manage their private cloud. Over time, as needs become more complex, customers can upgrade to the full multitenant Cisco Intelligent Automation for Cloud solution and extend support for a heterogeneous IT environment and hybrid cloud model.

Challenges

People, process, and policies frequently evolve slower than technology. In most IT organizations, the process for datacenter application and infrastructure service request management is complex and expensive. Each request is often treated as a separate project, requiring approvals and exceptions. The result is a time-consuming and inefficient series of manual steps, involving requirements validation, and architecture reviews that slow down the entire process and frustrate end user and business stakeholders who do not understand the source of the delays.

These users expect internal IT resources to be as easily available and cost effective as the resources available from public cloud service providers. IT teams that take advantage of private cloud solutions with prebuilt portal content and automation workflows can overcome many of these concerns and establish IT as a credible and trusted business partner by rapidly delivering IaaS. As trust develops, it will be easier for business and IT decision makers to work together to define more comprehensive standards, templates, and workflows to extend the scope and value of the organization's private and hybrid cloud environments.

Conclusion

Whether being considered to support an organization's initial private cloud deployment or help an organization recover from a false start, an entry-level private cloud automation solution can enable IT teams to quickly demonstrate the value of IaaS. In doing so, IT leaders can build business interest and credibility in these types of highly optimized and automated IT environments. To the extent that the Cisco Intelligent Automation for Cloud Starter Edition helps IT teams succeed in the initial steps of their cloud journey, it will become an effective on-ramp for many UCS customers that are anxious to deploy a private cloud today in order to improve business agility and reduce IT costs.

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